The Effectiveness of Auditory Sub-Threshold Stimuli on Improving the Academic Performance and Mental Propensity of Students With Learning Disabilities

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Subliminals are stimuli that fall short of the average threshold of the brain's auditory and visual cortex which have been speculated to establish correlations in the mind that affect one's imminent behavior. To investigate the effectiveness of subliminals, we embedded continuous variations of affirmations within a backtrack to overcome any obstacles that may have risen from learning insecurities. We tested six individuals–three of which were in the control group without a subliminally altered audio–for four consecutive days with instructions for them to listen with headphones for ten minutes while completing a comprehensive test that increased in difficulty each day and finishing with a post-experimental self-assessment to configure their confidence. Variables that were measured in this test included: heart rate, galvanic skin response, accuracy, and self-assessment trends. After our investigation, we concluded through a paired t-test that in terms of physiological reactions, there was a -7% decrease in heart rate over the span of 4 days in comparison to the 1% increase within the control. The galvanic skin response sensor revealed no major significance in stress, however, the self-reported anxiety demonstrated a p value of 0.008 on day 2 and 0.01 on day 4 along with a 42.86% decrease in the experimental group's anxiety leading us to reject that null hypothesis that there would be no difference between the two groups' anxiety. Lastly, the performance revealed there was a 19.15% increase in the experimental's scores over the span of days compared to the 13.73% decrease in the control's scores.Through our data, we found a correlation between lowered anxiety due to the introduction of sub-threshold stimuli and increased performance.

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